

Application Serial No. 10/714,221
Reply to Office Action of October 7, 2004

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Amendments To The Claims

The listing of claims presented below will replace all prior versions, and listings, of claims in the application.

Listing of claims:

1. (currently amended) A liquid crystal display comprising:

an upper substrate;

a lower substrate;

a planar pixel electrode having a plurality of slits formed in a pixel region of
on the lower substrate and having an area that substantially covers the area of a
unit pixel of the liquid crystal display, wherein the slits in the first half of the unit
pixel are longitudinal and substantially parallel to each other and wherein the slits in
the other half of the unit pixel are substantially perpendicular to the slits in the first
half of the unit pixel each of the slits having a minute distance from adjacent one
of the slits;

a valley first and second valleys formed in a color filter of the upper
substrate covered with a transparent electrode, and having a predetermined angle
with respect to the slits wherein the first valley is aligned in an angle of 0 to 90
degrees with respect to the slits in the first unit pixel and wherein the second
valley is aligned in an angle of 0 to 90 degrees with respect to the slits in the
second unit pixel;

vertical alignment material formed in on opposite faces of the upper and

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lower substrates;

a liquid crystal layer ~~injected~~ formed in between the upper and lower substrates; and

polarizers arranged ~~in~~ on outer faces of the upper and lower substrates, and having transmission axes which are perpendicular to each other.

2-3. (cancelled)

4. (original) The liquid crystal display as set forth in claim 1, wherein the slits formed in the lower substrate have a width within about 5 μ m, and the valley formed in the upper substrate has a width of about 5 to 20 μ m.

5. (currently amended) The liquid crystal display as set forth in claim 1, wherein four domains are configured by the valleys and the slits. ~~the slits formed in the lower substrate and the valleys formed in the upper substrate are arranged in a zigzag or crossed configuration to define multiple domains.~~

6. (original) The liquid crystal display as set forth in claim 1, further comprising uniaxial or biaxial phase compensation plates between the lower substrate and one of the polarizers and between the upper substrate and the other one of the polarizers, wherein the uniaxial phase compensation plate has an Rth value ranging from about 40 to 800nm, and the biaxial phase compensation plate has an Rth value ranging from about 150 to 200 nm.

7. (original) The liquid crystal display as set forth in claim 1, wherein the liquid crystal layer has a thickness of about 2 to 6 μ m, and multiplication of the liquid

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crystal layer thickness and index of refraction anisotropy has a value of about 200 to 500 nm.

8. (original) The liquid crystal display as set forth in claim 1, wherein the liquid crystal has negative dielectric anisotropy ranging from about -2 to -10.

9. (currently amended) ~~The liquid crystal display as set forth in claim 1,~~ A liquid crystal display comprising:

an upper substrate;

a lower substrate;

a planar pixel electrode having a plurality of slits formed in accordance with a predetermined pattern on the lower substrate;

a valley formed in a color filter of the upper substrate covered with a transparent electrode, and having a predetermined angle with respect to the slits of the pixel electrode;

vertical alignment material formed on opposite faces of the upper and lower substrates;

a liquid crystal layer formed in between the upper and lower substrates; and
polarizers arranged on outer faces of the upper and lower substrates, and having transmission axes which are perpendicular to each other, wherein one of the polarizers arranged in the outer faces of the upper and lower substrates has an angle of about 30 to 60 degrees with respect to the slits or the valley.

10. (new) The liquid crystal display as set forth in claim 9, wherein the slits

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formed in the lower substrate are arranged with respect to the valley formed in the upper plate at an angle of about 0 to 90 degrees.

11. (new) The liquid crystal display as set forth in claim 9, wherein the slits formed in the lower substrate are arranged with respect to the valley formed in the upper plate at an angle of about 0 to 45 degrees.

12. (new) The liquid crystal display as set forth in claim 9, wherein the slits formed in the lower substrate have a width within about 5 μm , and the valley formed in the upper substrate has a width of about 5 to 20 μm .

13. (new) The liquid crystal display as set forth in claim 9, wherein the slits formed in the lower substrate and the valleys formed in the upper substrate are arranged in a zigzag or crossed configuration to define multiple domains.

14. (new) The liquid crystal display as set forth in claim 9, further comprising uniaxial or biaxial phase compensation plates between the lower substrate and one of the polarizers and between the upper substrate and the other one of the polarizers, wherein the uniaxial phase compensation plate has an R_{th} value ranging from about 40 to 800nm, and the biaxial phase compensation plate has an R_{th} value ranging from about 150 to 200 nm.

15. (new) The liquid crystal display as set forth in claim 9, wherein the liquid crystal layer has a thickness of about 2 to 6 μm , and multiplication of the liquid crystal layer thickness and index of refraction anisotropy has a value of about 200 to 500 nm.

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16. (new) The liquid crystal display as set forth in claim 9, wherein the liquid crystal has negative dielectric anisotropy ranging from about -2 to -10.
17. (new) A liquid crystal display comprising:
- an upper substrate;
 - a lower substrate;
 - a planar pixel electrode having a plurality of slits formed on the lower substrate and having an area that substantially covers the area of a unit pixel of the liquid crystal display, wherein the slits in the first half of the unit pixel are v-shaped and parallel to each other and wherein the slits in the other half of the unit pixel are substantially a mirror image of the slits in the first half of the unit pixel;
 - a valley formed in a color filter of the upper substrate covered with a transparent electrode, wherein the valley is aligned in an angle of about 45 degrees with respect to any branch of the V-shaped slit;
 - vertical alignment material formed on opposite faces of the upper and lower substrates;
 - a liquid crystal layer formed in between the upper and lower substrates; and
 - polarizers arranged on outer faces of the upper and lower substrates, and having transmission axes which are perpendicular to each other.
18. (new) The liquid crystal display as set forth in claim 17, further comprising uniaxial or biaxial phase compensation plates between the lower substrate and one of the polarizers and between the upper substrate and the other one of the

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polarizers, wherein the uniaxial phase compensation plate has an Rth value ranging from about 40 to 800nm, and the biaxial phase compensation plate has an Rth value ranging from about 150 to 200 nm.

19. (new) The liquid crystal display as set forth in claim 17, wherein the liquid crystal layer has a thickness of about 2 to 6 μ m, and multiplication of the liquid crystal layer thickness and index of refraction anisotropy has a value of about 200 to 500 nm.

20. (new) The liquid crystal display as set forth in claim 17, wherein the liquid crystal has negative dielectric anisotropy ranging from about -2 to -10.